USP Method for HPLC
Analysis of Pramoxine

Application

Pharmaceutical

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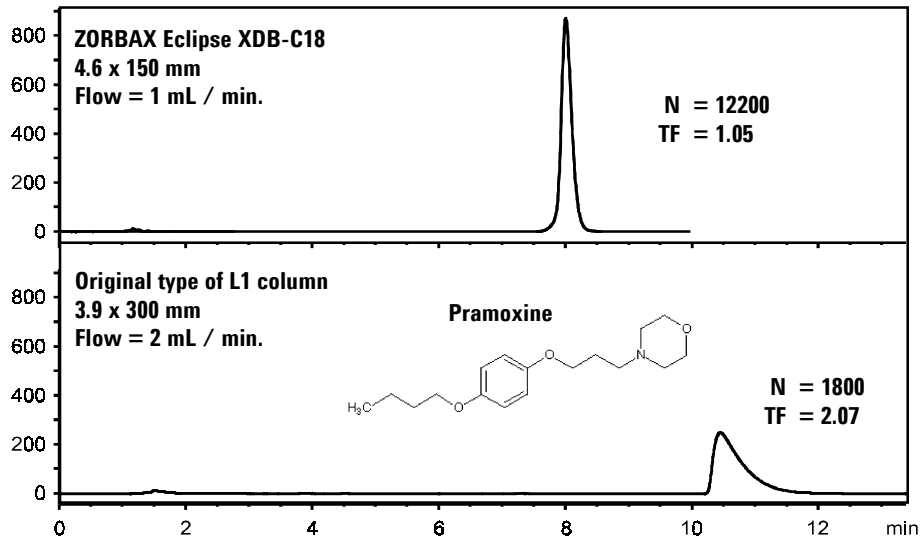
According to the United States Pharmacopeia (USP), L1 column packing is defined as "octadecyl silane chemically bonded to porous silica or ceramic micro-particles, 3 to 10 µm in diameter." Some USP methods specifying an L1 column use intermediate pH, and many of these methods were done on a 10 µm, 3.9 x 300 mm column. Until recently there was no modern alternative to the older 10 µm C18 column for intermediate pH-range applications.

Now ZORBAX Eclipse XDB-C18 is available as a state of the art L1 alternative, available in 3.5 and 5.0 µm particle sizes and various column dimensions.

Below is a comparison of the USP method for the local anesthetic, pramoxine HCl performed on the original brand of L1 column and on a modern L1 column, ZORBAX Eclipse XDB-C18. The USP Method uses a pH 7.5 acetonitrile: phosphate buffer (55:45) mobile phase and a flow rate of 2.0 ml/min. Intermediate pH imparts a negative charge on the stationary phase which may be detrimental to peak shape. The 2.0 ml/min. flow rate is standard on the older 3.9 x 300 mm columns. On 150 mm columns flow rate is typically 1.0 ml/min.



Conditions: LC: Hewlett-Packard Series II 1090
Column: ZORBAX Eclipse XDB-C18, Agilent P/N: 993967-902
Mobile Phase: 55% ACN : 45% 50 mM K_2HPO_4 (pH 7.5)
UV: 224 nm; 23°C; Inj Vol: 10 µg

Highlights

- *Improved peak shape using ZORBAX Eclipse XDB-C18.*
- *Higher efficiency of ZORBAX Eclipse XDB-C18.*
- *Using ZORBAX Eclipse XDB-C18 as a state of the art L1 column offers:*
  - *Greater sensitivity*
  - *Reduced analysis time*
  - *Reduced back pressure*
  - *Shorter length offers reduced solvent use per analysis*
- *USP performance is easily surpassed using ZORBAX Eclipse XDB-C18.*
  - *The number of theoretical plates (N) is more than 8 times greater than the number USP deemed necessary on the original L1 brand (12,200 vs. 1500).*
  - *USP tailing factor is much closer to the ideal 1.0 value on Zorbax Eclipse XDB-C18, than to USP's requirement of <1.5.*

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